Remarks

I. Status of the Application and Claims

As originally filed, the present application had a total of 20 claims. These have now been cancelled and replaced with new claims 21-35.

II. The Amendments

The amended claims introduced herein are fully supported by the cancelled claims and the specification. The amendments do not add new matter to the application and their entry is therefore respectfully requested.

III. Objections to the Specification

On page 2 of the Office Action, the Examiner objects to the title as being non-descriptive. In response, Applicants have amended the title in a manner that they believe accurately reflects the invention claimed.

IV. Claim Objections

On page 3 of the Office Action, the Examiner objects to claim 1 because it refers to the production of an "L-amino acid product" rather than simply an "L-amino acid." In response, Applicants have amended claim 21 so that it now refers to an L-amino acid. In light of this amendment, Applicants respectfully request that the Examiner's objection be withdrawn.

Also on page 2 of the Office Action, the Examiner objects to the use of the term "yfiD" because it is allegedly an undefined abbreviation. Since this term has been deleted from the amended claims, it is respectfully submitted that the Examiner's objection has been obviated.

V. Submission of Declaration Under 35 CFR § 1.132

Applicants are submitting herewith a Declaration Under 35 CFR § 1.132 by Dr. Mechthild Rieping, one of the inventors named on the above-captioned application. This provides experimental evidence that the overexpression of the yfiD ORD results in the increased production of L-lysine in *E. coli*.

The Rejections

It appears that all of the rejections that have been made in this case are based upon 35 USC § 112, first paragraph. The Examiner argues that the claims are overly broad because they: a) include methods of producing all amino acids while the application only provides support for L-threonine; and b) include all yfiD genes from all species while only one particular ORF is described. In addition, the Examiner argues that the specification does not enable all methods of increasing the expression of yfiD sequences in all species of Enterobacteria.

Applicants believe that the amendments and Declaration that have been introduced herewith correct all of the problems that the Examiner brings up in the Office Action. The Declaration demonstrates that the overexpression of yfiD increases the bacterial production of L-lysine, an amino acid structurally very different from L-threonine. Applicants submit that this is evidence that overexpression has a general effect on amino acid production and not an effect that is limited to the L-threonine amino acid.

The amended claims do not encompass all species of yfiD. Instead, they require that the ORF make a protein having a specifically defined amino acid sequence, that of SEQ ID NO:4. Applicants wish to point out however that the doctrine of equivalents still applies to these claims and it is intended that, under this doctrine, the claims will encompass other sequences to the extent that they are not substantially different from the ones recited.

Applicants also wish to point out that the claims are limited to bacteria in which the specified ORFs are overexpressed, not all bacteria or all bacteria of the Enterobacteriaceae family. Similarly, all methods of increasing the activity of the yfiD product are not included. For example, methods of increasing enzymatic activity by modifying protein structural characteristics are not part of the claims. In this regard, the specification clearly describes bacteria in which expression of the yfiD ORF is increased and enables the making of such bacteria, *e.g.*, by transfection with a vector encoding the protein of SEQ ID NO:4. It is important to recognize that the claims are directed to a process in which bacteria engineered to overexpress yfiD are used. Thus, the description of a single method for making the required bacteria is all that is needed to fulfill the enablement requirement. It is not necessary

for Applicants to describe and enable every possible alternative method for increasing bacterial expression.

In light of these considerations and the amendments that have been introduced into claims, Applicants believe that all of the Examiner's rejections have been overcome. It is therefore respectfully requested that these rejections be withdrawn and that the claims now pending be allowed. Early notice to this effect is earnestly solicited.

If, in the opinion of the Examiner, a phone call would help to expedite the prosecution of this application, the Examiner is invited to call Applicants' undersigned attorney at (202) 419-7013.

Respectfully submitted,

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